

User Guide for Assessing the Components of the MUSIC Model of Academic Motivation

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OVERVIEW

What is included in this document?

This document contains the instructions, items, and keys for (a) the MUSIC Model of Academic Motivation Inventory (MUSIC Inventory) version 6, and (b) the middle school version of the MUSIC Inventory, as well as items that have been used as interview questions. The MUSIC inventory was developed by Dr. Brett Jones to measure constructs related to the five primary components of the MUSIC Model of Academic Motivation (Jones, 2009). Jones and Skaggs (2012) and Jones and Wilkins (2013, 2015) have conducted research to provide validation evidence for the MUSIC inventory.

What is the MUSIC Model of Academic Motivation?

The MUSIC model was developed by Jones (2009) to help instructors better understand how current motivation research and theories can be applied to instruction. The components in the MUSIC model are derived from research and theory as ones that are critical to student engagement in academic settings, including: empowerment, usefulness, success, interest, and caring. The name of the model, MUSIC, is an acronym based on the second letter of “empowerment” and the first letter of the other four components. For more information about the MUSIC model, please see Jones’ articles (Jones, 2009; Jones, 2010a; Jones, 2010b) and website (www.MotivatingStudents.info).

Studies over many years by many different researchers have shown that the individual MUSIC components are key to motivating students in the classroom (e.g., Ames, 1992; Bandura, 1986, 1997; Deci & Ryan, 1985, 1991; De Volder & Lens, 1982; Wigfield & Eccles, 2000; Hidi & Renninger, 2006). Jones (2009) examined the motivation research and theories and used them to develop the model so that it could be more readily applied to educational settings for instructors unfamiliar with the research in motivation. Although the individual ideas in the model are not new, identifying these particular ideas and combining them all together in one model is new, which is the major contribution of the MUSIC model. Many motivation theories incorporate ideas that are similar to one another, but use different names for these ideas, which can be very confusing to instructors unfamiliar with the nuances of the ideas. The strength of the MUSIC model is that it captures five key concepts that cut across many different motivation theories and incorporates them into one model. It is not limited to one conceptual or philosophical framework; instead, it pulls together the most important ideas for instructors into a conceptual model that can be implemented.

MUSIC MODEL OF ACADEMIC MOTIVATION INVENTORY (MUSIC Inventory)

Why is the MUSIC Inventory needed?

Although researchers have used other scales to measure constructs similar to those in the MUSIC model, few of these scales have been validated through the use of rigorous empirical evidence, and others have been modified for their use. As an example, Jones (2010a) used existing instruments, but deleted some of the items, deleted or add words to items, changed the wording of the items, changed the tenses of the items, and changed the number of descriptors in the Likert-type format scales. To address these problems and others, the MUSIC Inventory was developed to ensure that the items and scales for each MUSIC component would be similar in format and provide valid scores within the context of college-level courses (Jones & Skaggs, 2012). A shorter version has also been tested with empirical evidence for use with 5th, 6th, and 7th grade students in science (Jones & Wilkins, 2013, 2015) and middle and high school students in music (Parkes, Jones, & Wilkins, 2015). A version that can be used with elementary students is currently being finalized (Sigmon & Jones, 2015).

Can I use the MUSIC Inventory for my research or to evaluate my instruction?

Yes, you may use the MUSIC Inventory for research and teaching purposes as long as you provide the reference to the MUSIC Model of Academic Motivation (Jones, 2009) and one of the following references for the MUSIC Inventory if you publish your results in journal articles, books, presentations, websites, etc. If you are using your results for your own instructional purposes, there is no need to cite anything, simply use the inventories as needed.

For the college-level version:

- Jones, B. D., & Skaggs, G. (2012, August). *Validation of the MUSIC Model of Academic Motivation Inventory: A measure of students' motivation in college courses*. Research presented at the International Conference on Motivation 2012. Frankfurt, Germany.

For the middle school version (which likely works with high school students as well):

- Jones, B. D., & Wilkins, J. L. M. (2013, May). *Validity evidence for the use of a motivation inventory with middle school students*. Poster presented at the annual meeting of the Society for the Study of Motivation, Washington, D.C.

Please contact Brett Jones (brettjones@vt.edu) if you have any questions about the MUSIC Inventory or want a more recent reference for it.

What does the MUSIC Inventory measure?

The MUSIC Inventory measures the five primary components of the MUSIC Model of Academic Motivation: empowerment, usefulness, success, interest, and caring. The definitions for each of these constructs is provided in Table 1.

Table 1. *The MUSIC Inventory Constructs and Their Definitions*

Constructs	Definition
eMpowerment	The degree to which a student believes that: he or she has control of his or her learning environment in the course
Usefulness	the coursework is useful to his or her future
Success	he or she can succeed at the coursework
Interest (situational)	the instructional methods and coursework are interesting and enjoyable
Caring (academic and personal)	the instructor cares about whether the student succeeds in the coursework and cares about the student's well-being

How do I administer the MUSIC Inventory?

The instructions, MUSIC Inventory items, and key are provided below. Because the items are ordered randomly, the key is needed to understand which items correspond to each of the five scales.

A few notes about the aim of the MUSIC Inventory.

- The version provided here is the version that has been most rigorously assessed to date (Jones & Skaggs, 2012). This version is focused on a college *course*.
- The items are worded in the past tense because it has been administered near the end of a course. I have also administered it during the middle of a course and changed the verbs to present tense.
- I have changed the word “course” and “coursework” when used in K-12 settings. For instance, I have changed it to “science class.” I have provided the items with the wording changed in the pages that follow.
- I also believe that the wording could be changed to focus on a particular activity within a class by changing the word “coursework” to “activity.”

Instructions

Please rate the items in this section using the following scale:

1 Strongly disagree	2 Disagree	3 Somewhat disagree	4 Somewhat agree	5 Agree	6 Strongly agree
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Note that the word “coursework” refers to anything that you did in the course, including assignments, activities, readings, etc.

- _____ 1. The coursework held my attention.
- _____ 2. I had the opportunity to decide for myself how to meet the course goals.
- _____ 3. In general, the coursework was useful to me.
- _____ 4. The instructor was available to answer my questions about the coursework.
- _____ 5. The coursework was beneficial to me.
- _____ 6. The instructional methods used in this course held my attention.
- _____ 7. I was confident that I could succeed in the coursework.
- _____ 8. I had the freedom to complete the coursework my own way.
- _____ 9. I enjoyed the instructional methods used in this course.
- _____ 10. I felt that I could be successful in meeting the academic challenges in this course.
- _____ 11. The instructional methods engaged me in the course.
- _____ 12. I had options in how to achieve the goals of the course.
- _____ 13. I enjoyed completing the coursework.
- _____ 14. I was capable of getting a high grade in this course.
- _____ 15. The coursework was interesting to me.
- _____ 16. The instructor was willing to assist me if I needed help in the course.
- _____ 17. I had control over how I learned the course content.
- _____ 18. Throughout the course, I felt that I could be successful on the coursework.
- _____ 19. I found the coursework to be relevant to my future.
- _____ 20. The instructor cared about how well I did in this course.
- _____ 21. I will be able to use the knowledge I gained in this course.
- _____ 22. The instructor was respectful of me.
- _____ 23. The knowledge I gained in this course is important for my future.
- _____ 24. The instructor was friendly.
- _____ 25. I believe that the instructor cared about my feelings.
- _____ 26. I had flexibility in what I was allowed to do in this course.

How do I score the inventory?

The items for each scale are provided below. The easiest way to score it is to average the values from each item in the scale to produce a mean for the scale. For example, the “success” score = (item 7 + item 10 + item 14 + item 18) / 4. Jones and Skaggs (2012) have also used Rasch scaling to transfer the total score for any one scale to a Rasch scale score. This is only needed if you are conducting research with college students and want to correlate these values with other scales. If you are interested in this, email Brett Jones (brettjones@vt.edu) and he will email you the scale score conversion values for college students.

- eMpowerment = 2, 8, 12, 17, 26
- Usefulness = 3, 5, 19, 21, 23
- Success = 7, 10, 14, 18
- Interest (situational) = 1, 6, 9, 11, 13, 15
- Caring = 4, 16, 20, 22, 24, 25

Scales	Items by Scale
Empowerment (5 items; $\alpha = .91$)	<ul style="list-style-type: none"> • I had control over how I learned the course content. • I had the opportunity to decide for myself how to meet the course goals. • I had the freedom to complete the coursework my own way. • I had options in how to achieve the goals of the course. • I had flexibility in what I was allowed to do in this course.
Usefulness (5 items; $\alpha = .96$)	<ul style="list-style-type: none"> • In general, the coursework was useful to me. • The coursework was beneficial to me. • I found the coursework to be relevant to my future. • I will be able to use the knowledge I gained in this course. • The knowledge I gained in this course is important for my future.
Success (4 items; $\alpha = .93$)	<ul style="list-style-type: none"> • I was confident that I could succeed in the coursework. • I felt that I could be successful in meeting the academic challenges in this course. • I was capable of getting a high grade in this course. • Throughout the course, I felt that I could be successful on the coursework.
Interest (6 items; $\alpha = .95$)	<ul style="list-style-type: none"> • The coursework was interesting to me. • The coursework held my attention. • The instructional methods used in this course held my attention. • I enjoyed the instructional methods used in this course. • The instructional methods engaged me in the course. • I enjoyed completing the coursework.
Caring (6 items; $\alpha = .93$)	<ul style="list-style-type: none"> • The instructor was available to answer my questions about the coursework. • The instructor was willing to assist me if I needed help in the course. • The instructor cared about how well I did in this course. • The instructor was respectful of me. • The instructor was friendly. • I believe that the instructor cared about my feelings.

Note: The reliability estimates provided are from Jones and Skaggs (2012).

How is the MUSIC Inventory changed for use with middle school students?

The middle school version of the MUSIC Inventory has the wording of the items in the present tense and asks specifically about a class (in this case, science class). Jones and Wilkins (2013, 2015) provided empirical evidence that the 18-item version below was acceptable for use with 5th, 6th, and 7th grade students. The shorter version requires students to spend less time on it. I suspect that the word “science” can be replaced with any subject area, although we have not tested other subject areas rigorously yet. Because the items are ordered randomly, the key below is needed to understand which items correspond to each of the five scales.

I suggest handing out the directions below (between the dotted lines) on one sheet of paper. Read the directions aloud to the students then ask them to answer the “I like to eat pizza” item. After a few seconds, read the text below the pizza item and ask them if they have any questions. Next, collect these directions and handout the middle school version of the MUSIC Inventory that is on the following page. I do not hand out these two sheets at the same time because I do not want any students to start completing the inventory before I finish reading the directions.

Directions

This is not a test and there are no right or wrong answers. We are only interested in your honest opinion. Your responses will remain confidential. This means that no one at your school will know how you answered these questions because your names will be removed from the questionnaire and your answers will be summarized with the answers of the other students in your school.

Some of the questions will seem similar to one another; however, it is important that you answer all of them to ensure that we completely understand your answers.

The questions ask you to select a number for your answer. Please select the number that best describes what you believe.

Example Question 1

Please select one of the numbers from 1 to 6 below and write it in the space next to the question.

1 Strongly disagree	2 Disagree	3 Somewhat disagree	4 Somewhat agree	5 Agree	6 Strongly agree
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_____ 1. I like to eat pizza.

For this question, you would select a “6” if you like to eat pizza a lot, you would select a “1” if you do not like pizza at all, or any number in between depending on how much you like pizza. What number would you choose if you liked pizza a little? Maybe a 2, or 3, or 4. You can pick any number depending on how much you like pizza. You answer the questions on the real survey using this same scale.

Directions

These items ask you about your current **SCIENCE CLASS** and **SCIENCE TEACHER**.

Please select one of the numbers from 1 to 6 below and write it in the space next to each question.

1 Strongly disagree	2 Disagree	3 Somewhat disagree	4 Somewhat agree	5 Agree	6 Strongly agree
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- _____ 1. The knowledge I gain in science class is important for my future.
- _____ 2. I am confident that I can succeed in science class work.
- _____ 3. My science teacher cares about how well I do in science class.
- _____ 4. I am capable of getting a high grade in science class.
- _____ 5. I have the freedom to complete my science class work in my own way.
- _____ 6. The science class work is interesting to me.
- _____ 7. I feel that I can be successful in meeting the academic challenges in science class.
- _____ 8. I enjoy completing science class work.
- _____ 9. In general, science class work is useful to me.
- _____ 10. During science class, I feel that I can be successful on the class work.
- _____ 11. My science teacher is friendly.
- _____ 12. I have choices in what I am allowed to do in science class.
- _____ 13. I find science class work to be relevant to my future.
- _____ 14. My science teacher is willing to assist me if I need help in science class.
- _____ 15. My science teacher is respectful of me.
- _____ 16. I have control over how I learn the content in science class.
- _____ 17. The science class work holds my attention.
- _____ 18. I have options in how to achieve the goals in science class.

How do I score the MUSIC Inventory – middle school version?

The 18 items in the middle school version were ordered randomly, so it is first necessary to match the item number with the corresponding MUSIC component as shown below. Score each MUSIC component by averaging the values from each item in the scale to produce a mean for the scale. For example, the “usefulness” score = (item 1 + item 9 + item 13) / 3

- eMpowerment = 5, 12,16,18
- Usefulness = 1, 9, 13
- Success = 2, 4, 7, 10
- Interest (situational) = 6, 8, 17
- Caring = 3, 11, 14, 15

Scales	Items by Scale
Empowerment (4 items)	<ul style="list-style-type: none"> • I have the freedom to complete my science class work in my own way. • I have choices in what I am allowed to do in science class. • I have control over how I learn the content in science class. • I have options in how to achieve the goals in science class.
Usefulness (3 items)	<ul style="list-style-type: none"> • The knowledge I gain in science class is important for my future. • In general, science class work is useful to me. • I find science class work to be relevant to my future.
Success (4 items)	<ul style="list-style-type: none"> • I am confident that I can succeed in science class work. • I am capable of getting a high grade in science class. • I feel that I can be successful in meeting the academic challenges in science class. • During science class, I feel that I can be successful on the class work.
Interest (3 items)	<ul style="list-style-type: none"> • The science class work is interesting to me. • I enjoy completing science class work. • The science class work holds my attention.
Caring (4 items)	<ul style="list-style-type: none"> • My science teacher cares about how well I do in science class. • My science teacher is friendly. • My science teacher is willing to assist me if I need help in science class. • My science teacher is respectful of me.

MUSIC MODEL OF ACADEMIC MOTIVATION INTERVIEW QUESTIONS FOR STUDENTS

Where did these interview questions for students come from?

This section includes questions from three different studies in which the researchers interviewed students about their perceptions related to the components of the MUSIC Model of Academic Motivation (Jones, 2009). There is no one “correct” way to ask students about their perceptions related to the MUSIC model; therefore, you can alter these questions in any way that makes sense for the objectives of your interviews. All three studies had different purposes which is why the questions from each study are slightly different. Use the questions that allow you to best meet your objectives.

If the questions you use are the same as, or similar to, the questions from a study below and you present or publish the results, please cite the study.

STUDY 1 – The following questions are from:

- Evans, M. A., Jones, B. D., & Akalin, S. (2012, April). *Leveraging digital game design in an informal science learning environment to motivate high school students in biology*. Paper presented at the annual meeting of the American Educational Research Association, Vancouver, Canada.

NOTE: The word “activity” can be substituted with the specific activity that a student is working on.

Empowerment

1. How much control do you have over what you’re working on? (How much do you feel like you are doing what you want to be doing during this activity?)
 - a. What things do you have control over?

Usefulness

2. How useful is this activity for your goals this year or in the future?
 - a. In what ways is it useful?

Success

3. How successful do you think that you will be at this activity?
 - a. (If needed): Why?

Situational Interest

4. How interested are you in working on this activity? (How much do you enjoy this activity?)
 - a. What about it interests you?

Individual Interest

5. How important is this activity to you?
 - a. Why is it important?

Academic Caring (teacher)

6. How much does your teacher want you to succeed at this activity? (How much does your teacher like to help you on this activity?)
 - a. How do you know?

Personal Caring (teacher)

7. How much does your teacher care about you?
 - a. How do you know?

Academic Caring (other students)

8. How much do other students want you to succeed at this activity?
 - a. How do you know?

Personal Caring (other students)

9. How much do other students care about you?
 - a. How do you know?
-

STUDY 2 – The following questions are from:

- Jones, B. D., Epler, C. M., Mokri, P., Bryant, L. H., & Paretti, M. C. (2013). The effects of a collaborative problem-based learning experience on students' motivation in engineering capstone courses. *Interdisciplinary Journal of Problem-based Learning*, 7(2). doi:10.7771/1541-5015.1344

eMpowerment

- As you worked on your project, what aspects of the project were you able to control?
- What types of decisions did your group make in regards to how your group functioned?
 - What was the result of those decisions?
- What types of decisions did your advisor make for you?

Usefulness

- How will what you are learning in this group project be useful to your short-term goals? Long-term goals?
- Was working within a collaborative group a realistic simulation of a real-world work experience? Please describe.

Success

- What aspects of this project make you feel competent? Overwhelmed? Bored?
- Describe the feedback you have received from the instructor and your advisor on this project.
 - How does that differ from the feedback you received from your group members?
 - What feedback has contributed most to your success?
- Do you believe that working within a group made this project easier or more challenging? Please explain.

Interest

- How did your group determine the topic you selected?
- Describe your initial interest in the project.
- How did working in a group influence your interest in the project?
- Describe your interest in the project now.
 - Has this changed? If yes, what caused the change?
- Are the ideas and/or topics in this project really important to you? Please explain what makes them important to you.
 - That is, do you care about the ideas, issues, and/or topics involved in this project?

Caring

- Describe your group's dynamics.
 - Describe how you interacted with your group members.
 - What would you change about the dynamics of your group?
 - Describe your group's relationship with your advisor.
 - What role did your project's advisor play?
 - How does your advisor show respect and concern for your group?
 - What would you change about the role of your advisor?
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MUSIC MODEL OF ACADEMIC MOTIVATION

INTERVIEW QUESTIONS FOR TEACHERS

Where did these interview questions for teachers come from?

The questions in this section are intended to be asked to teachers. They were created by Jones (2009) for instructors to use to begin thinking about their teaching. However, they could be used just as well during an interview with a teacher.

QUESTIONS – The following questions are from:

- Jones, B. D. (2009). Motivating students to engage in learning: The MUSIC Model of Academic Motivation. *International Journal of Teaching and Learning in Higher Education*, 21(2), 272-285.

eMpowerment

1. Do you feel that students have control over some aspects of their learning?
 - a. Do they have choices about what they can do?
2. Do you believe, as their teacher, that you empower them to learn the material and do not try to manipulate their behavior?

Usefulness

1. Do you believe that students understand why your lessons are useful to their interests, to their career goals, and/or in the “real-world”?

Success

1. Do you believe that your lessons clearly state your expectations for them?
2. Do you think the learning activities are challenging in that they are not too hard or easy?
3. Do you provide regular feedback about their level of competence?
 - a. (Another way to say this: How do they know how well they’re doing?)
4. Do they believe that they can succeed?
 - a. Do you feel that the lessons create a belief that they can succeed if they put forth the effort?

Interest

1. Do you feel that students are interested in the lessons?

Caring

1. Do you feel that the students believe that you care about whether they achieve the objectives of the lesson?
2. Do you feel that the students believe that you care about their well-being?

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